Listing of Claims:

Claims 1-39 (Canceled).

40. (New) An image processor for converting input image data having a first number of tones into halftone-processed image data having a second number of tones which is lower than the first number of tones by halftone processing, and for outputting a dot image corresponding to the halftone-processed image data, said image processor comprising:

halftone processing means for halftone-processing the input image data based on thresholds in a threshold array extending over a plurality of dither threshold planes each having a same size unit threshold matrix on which the thresholds are positioned, to produce the halftone-processed image data; and

image output means, having a first output position accuracy in a first scan direction and a second output position accuracy which is lower than the first output position accuracy in a second scan direction orthogonal to the first scan direction, for outputting the dot image, which has continuous medium-to-high tone dots in the second scan direction, in accordance with the halftone-processed image data;

wherein an order of the thresholds on the unit threshold matrix is defined based on both a reference threshold array

indicating the order of the thresholds positioned on the unit threshold matrix on each dither threshold plane and a threshold sequence indicating correlation among the plurality of dither threshold planes with respect to the threshold array; and

wherein the medium-to-high tone dots are produced based on the order of the thresholds from medium to high in the unit threshold matrix, the order of the medium-to-high thresholds is of both an aperiodic array and an anisotropic array, and the anisotropic array includes neighboring thresholds having close values in the second scan direction.

41. (New) An image processor according to claim 40, wherein low thresholds in the threshold array are arranged to be dispersed isotropically in the unit threshold matrix, and the image output means outputs an image having low-tone dots which are isotropically dispersed.

42. (New) An image processor according to claim 40, wherein low thresholds in the threshold array are arranged to be dispersed anisotropically in the unit threshold matrix, and the image output means outputs an image having low-tone dots which are anisotropically dispersed.

43. (New) An image processor according to claim 40, wherein the halftone processing means includes: (i) a first reference threshold array having low thresholds in the threshold array which are dispersed isotropically in the unit threshold matrix, and (ii) a second reference threshold array having the low thresholds in the threshold array which are dispersed anisotropically in the unit threshold matrix; and

wherein the halftone processing means selects one of the first and second reference threshold arrays according to the output position accuracy of the image output means and uses the selected reference threshold array for the halftone processing.

44. (New) An image processor according to claim 40, wherein the aperiodic medium-to-high-tone threshold array is derived from an approximation calculation model imitating output characteristics of the image output means.

45. (New) An image processor according to claim 40, wherein the anisotropic medium-to-high-tone threshold array is determined using a convolution filtering operation, and anisotropic strength is determined by adjusting a constant of the convolution filtering operation, and wherein an optimum value of the constant is determined by a diameter and a distance of lowest-tone-level dots actually printed.

46. (New) An image processor according to claim 40, wherein the aperiodic medium-to-high-tone threshold array is set at random.

47. (New) An image processor according to claim 40, wherein the anisotropic medium-to-high-tone threshold array is set to have high anisotropy when a difference in the output position accuracy of the image output means between the first scan direction and the second scan direction is large and to have low anisotropy when the difference in the output position accuracy is small.

48. (New) An image processor according to claim 40, wherein low thresholds are a lower 20% of the thresholds of the threshold array.

49. (New) An image processor for converting input image data having M tones per pixel into a halftone-processed image data having N tones for K pixels by halftone processing, and for outputting a dot image corresponding to the halftone-processed image data, wherein K is greater than 1 and N is greater than 1, said image processor comprising:

halftone processing means for halftone-processing the input image data based on thresholds in a threshold array extending over a plurality of dither threshold planes each having a same size unit threshold matrix on which the thresholds are positioned to produce the halftone-processed image data; and

image output means, having a first output position accuracy in a first scan direction and a second output position accuracy which is lower than the first output position accuracy in a second scan direction orthogonal to the first scan direction, for outputting the dot image, which has continuous medium-to-high tone dots in the second scan direction, in accordance with the halftone-processed image data;

wherein an order of the thresholds on the unit threshold matrix is defined based on both a reference threshold array indicating the order of the thresholds positioned on the unit threshold matrix on each dither threshold plane and a threshold sequence indicating correlation among the plurality of dither threshold planes with respect to the threshold array; and

wherein the medium-to-high tone dots are produced based on the order of the thresholds from medium to high in the unit threshold matrix, the order of the medium-to-high thresholds is of both an aperiodic array and an anisotropic array, and the anisotropic array includes neighboring thresholds having close values in the second scan direction.

50. (New) An image processor according to claim 49, wherein low thresholds in the threshold array are arranged to be dispersed isotropically in the unit threshold matrix, and the image output means outputs an image having low-tone dots which are isotropically dispersed.

51. (New) An image processor according to claim 49, wherein low thresholds in said threshold array are arranged to be dispersed anisotropically in the unit threshold matrix, and the image output means outputs an image having low-tone dots anisotropically dispersed.

52. (New) An image processor according to claim 49, wherein the halftone processing means includes: (i) a first reference threshold array having low thresholds in the threshold array which are dispersed isotropically in the unit threshold matrix, and (ii) a second reference threshold array having the low thresholds in the threshold array which are dispersed anisotropically in the unit threshold matrix; and

wherein the halftone processing means selects one of the first and second reference threshold arrays according to the output position accuracy of the image output means and uses the selected reference threshold array for the halftone processing.

53. (New) An image processor according to claim 49, wherein the aperiodic medium-to-high-tone threshold array is derived from an approximation calculation model imitating output characteristics of the image output means.

54. (New) An image processor according to claim 49, wherein the aperiodic medium-to-high-tone threshold array is set at random.

55. (New) An image processor according to claim 49, wherein the anisotropic medium-to-high-tone threshold array is set to have high anisotropy when a difference in the output position accuracy of the image output means between the first scan direction and the second scan direction is large and to have low anisotropy when the difference in the output position accuracy is small.

56. (New) An image processor according to claim 49, wherein low thresholds are lower 20% thresholds of said threshold array.

57. (New) An image processor for converting color input image data having a first number of tones into a halftone-processed image data having a second number of tones which is

lower than the first number of tones by halftone processing and for outputting a dot image corresponding to the halftone-processed image data, said image processor comprising:

halftone processing means for halftone-processing the input image data based on thresholds in a threshold array extending over a plurality of dither threshold planes each having a same size unit threshold matrix on which the threshold is positioned to produce the halftone-processed image data, the halftone processing means carrying out both a first halftone processing using the threshold array for at least two color components and a second halftone processing based on an error diffusion processing for color components other than the two color components; and

color image output means, having a first output position accuracy in a first scan direction and a second output position accuracy which is lower than the first output position accuracy in a second scan direction orthogonal to the first scan direction, for outputting the dot image which has continuous medium-to-high tone dots in the second scan direction in accordance with the halftone-processed image data;

wherein an order of the thresholds on each unit threshold matrix is defined based on both a reference threshold array indicating the order of the thresholds positioned in the unit threshold matrix on each dither threshold plane and a threshold

sequence indicating correlation among the plurality of dither threshold planes with respect to the threshold array; and

wherein the medium-to-high tone dots are produced based on the order of the thresholds from medium to high in the unit threshold matrix, the order of the medium-to-high thresholds is of both an aperiodic array and an anisotropic array, and the anisotropic array includes neighboring thresholds having close values in the second scan direction.

58. (New) An image processor according to claim 57, wherein the halftone processing means carries out the halftone processing using, as the threshold array extending over the plurality of dither threshold planes, a threshold array in which substantial resolutions of color components other than a yellow component are highest.

59. (New) An image processor for converting color input image data having a first number of tones into image data having a second number of tones which is lower than said first number of tones by a halftone processing and for outputting an image corresponding to the image data, said image processor comprising:

halftone processing means for carrying out the halftone processing using a plurality of threshold planes and for providing halftone-processed image data; and

color image output means for outputting an image corresponding to said halftone-processed image data provided from said halftone processing means,

wherein said color input image data contains a yellow component; and

wherein serial thresholds for respective colors are arranged to extend over said plurality of dither threshold planes, there are more dither threshold planes over which said serial thresholds extend for yellow than for any other color, and there are more types of output yellow dot sizes than for other colors.

60. (New) An image processor according to claim 59, wherein thresholds of similar sizes are arranged on one threshold plane for color components other than the yellow component, and the serial thresholds are arranged to extend over other threshold planes near thresholds corresponding to a specific tone so as to prevent an image containing all single-size dots from being printed if a uniform input image of said specific tone is reproduced.